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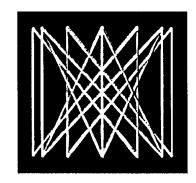
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15 June 2000 (15.06.00)

(54) Title: RADIALLY EXPANDABLE DEVICE

(57) Abstract

An expandable device is provided that includes a plurality of elongated members that are positioned and arranged to define a lattice structure having crossing points (or nodes) along interior positions of the elongated members. Preferably, the lattice structure is a hyperboloid of revolution. The device includes a plurality of flexible interconnectors located at the crossing points for securing one elongated member to another. The device is radially compressible and expandable. The device may include flexible joiner elements at that join at least two elongated members together at their ends to form an apex. The device may be used in a variety of applications including medical applications such as surgical retractors, space creators, endoluminal prosthesis, such as catheters, dilators or stents, mechanisms for expanding stents, controllably catheters, drains or valves and connectors for hollow organs. The device may also be used in building and construction applications such as emergency shelters, housing structural supports, receptacles, masts and cooling tower support structures.



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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 E04B1/344 E04H12/18 E04H5/12 A61F2/06 A61B17/16 A61B17/02 A61F2/04 A61F13/20 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) E04B E04H A61F A61B IPC 7 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages 1-3,5-7, EP 0 744 575 A (ALEPH CO LTD) X 17,20, 27 November 1996 (1996-11-27) 21,26, 27,29, 30,38, 51,53, 55,63, 64,67, 68,71, 72,74,75 page 2, line 5 - line 8
page 2, line 48 - line 54
page 10, line 10 -page 12, line 14
page 13, line 24 -page 14, line 35
page 15, line 29 -page 16, line 9
page 17, line 3 - line 32
page 19, line 19 - line 38; figures
1-11,21-28,35-37,41,42,60-63 -/--Х Patent family members are listed in annex. Further documents are listed in the continuation of box C. Special categories of cited documents: T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-"O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled in the art. other means *P* document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 17 04 2000 20 December 1999 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, PORWOLL, H Fax: (+31-70) 340-3016

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į	column 4, line 19 -column 5, line 66; figures	
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C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	Relevant to claim No.
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Immational application No.

PCT/US 99/19457

Box I	Observations where certain claims were found unsearchable (Continuation of Item 1 of Item 1 of Item 1
This Inte	ernational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1.	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2.	Claims Nos.: because they relate to parts of the international Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II	Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
	mational Searching Authority found multiple inventions in this international application, as follows:
	As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
	As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.	As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
	No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1–18, 20–38, 51–55, 63–76.
Remark o	The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-18,20-38,51-55,63-76 (searched)

Use of a radially expandable and contractable device in the field of building construction and civil engineering.

2. Claims: 1,19,39-50,56-62 (not searched)

Use of a radially expandable and contractable device in the medical field.

Information on patent family members

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